

E73 10916

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Title: Plan for the Uniform Mapping of Earth Resources and Environmental Complexes from Skylab Imagery

Progress Report: No. 5

Period Covered: 1 June 1973 to 30 June 1973

Contract: NAS9-13286
EREP Investigation #510

EarthSat Project: G-089

MAJOR ACCOMPLISHMENTS

Additional aerial photography missions of selected rice study fields and natural environmental complexes were accomplished to coincide closely if not exactly with the EREP data passes of Skylab 2 over our test sites. We were pleased to hear that imagery was taken of all but one (Louisiana Coastal Plain) test site by the Skylab 2 astronauts.

Because it is necessary to monitor the changing characteristics of the environmental complexes in each test area periodically and to record in detail certain features, we have been taking aerial photography at more frequent intervals than the Skylab overpasses will provide. From these data it will be possible to fill in the periods when critical natural vegetation and rice crop conditions are changing that will not be covered by Skylab or NASA aircraft.

E73-10916) PLAN FOR THE UNIFORM MAPPING
OF EARTH RESOURCES AND ENVIRONMENTAL
COMPLEXES FROM SKYLAB IMAGERY Monthly
Progress Report, (Earth Satellite Corp.,
Berkeley, Calif.) 4 p HC \$3.00 CSCL 08B

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Rice Analog Areas

The rice growing areas in Louisiana were subjected to extended periods of rainfall in the spring planting weeks which resulted in delays in soil preparation and planting. Preliminary evaluation of rice crop photographs indicates an excellent rice stand having been established with the potential for high yield.

Natural Vegetation Analog Areas

Developed list of probable natural vegetation and environmental complexes likely of imaging in SL-2. Selected specific analog areas for calibration studies and for large-scale aerial photography by EarthSat.

Interacted with local cooperators on snow and plant development conditions and with EREP office on adjusted SL-2 overpass usability and on support RB 57 photography in real time with SL-2.

Photographs are being taken from the ground and from low flying project aircraft for use in preparing preliminary photo interpretation keys for both the rice and natural vegetation analogs. This activity will continue as the season progresses. NASA high flight aircraft photos will also be used for the above activities.

SUMMARY OUTLOOK

From preliminary reports we understand that a considerable amount of imagery was acquired by Skylab 2 of our test areas with the exception of the Louisiana rice test site. We therefore are confident that some very meaningful judgments can be made in fulfillment of the stated objectives. We must commend the Skylab 2 astronauts for their outstanding performance and demonstration of courage and versatility in completing a

nearly impossible mission. We scientists will be challenged to fulfill our parts of the Skylab project with an equal display of fortitude.

We, of course, await the launch and functioning of Skylab 3 with great enthusiasm.

TRAVEL PLANS

Travel activities to the various test sites are being carried out very close to nominal schedules. During the next reporting period all sites will be monitored on at least two occasions to record the occurrence of significant events in the respective vegetation calendars.

PERSONNEL

Mr. Dennis Jaques has joined the project staff to assist in photo interpretation and field data collecting activities. He has gained considerable experience while a student and project assistant under the Principal Investigator, Dr. Charles E. Poulton, performing ERTS and associated studies.

During our visits to the test sites in Louisiana and California rice fields, the project aircraft was used to overfly the study sites to visually observe significant anomalies such as rice crop quality, excess or deficient fertilizer application, soil deficiencies, pest attacks, weed infestations and crop development problems. We simultaneously took aerial photographs with color and color infrared film to document the ground conditions on low altitude aerial photos. It was found that general field checking and accurate crop identification in our test areas can be accomplished from the aircraft by an experienced pilot and observer (photographer) at 100 mph from an altitude of 500 feet.

As soon as Skylab 2 photos are received, comparative photo interpretation will be undertaken in an attempt to evaluate the ability of the EREP photo systems to record important crop data observed on the large-scale aerial photos.

PROBLEMS

No significant problems have been encountered during this reporting period.

PLANS FOR NEXT REPORTING PERIOD

The growth and condition of vegetation in each rice test area will be monitored to provide data for photo interpretation evaluation by both field observation and consultation with cooperating growers.

In the wildland areas direct field observation of natural vegetation analogs will be accomplished to determine the phenological stages of development and the accuracy by which Skylab photo interpretation methods can define boundaries of vegetational complexes and identify the major plant species that make up the communities.